

Message Text

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TO AMEMBASSY NEW DELHI IMMEDIATE

AMCONSUL BOMBAY IMMEDIATE

UNCLAS STATE 172033

E.O. 11652: N/A

TAGS: PFOR, TECH, IN

SUBJECT: TARAPUR: DECLASSIFICATION OF LETTERS

REF: NEW DELHI 10150

HERE IS DECLASSIFIED TEXT OF JUNE 29 HEAVY WATER LETTER TO NRC.

1. BEGIN QUOTE: DEAR MR. HUBERMAN: IN RECENT CONVERSATIONS, YOU HAVE REQUESTED ADDITIONAL INFORMATION AND CLARIFICATION OF INFORMATION PREVIOUSLY PROVIDED TO THE NRC ON THE U.S. SUPPLY OF HEAVY WATER TO INDIA, THE NANGAL HEAVY WATER PLANT (DELETION). WE HAVE CAREFULLY CONSIDERED THE ISSUES INVOLVED IN THIS AND RELATED MATTERS.

2. THE RESULTS OF OUR REVIEW ARE AS FOLLOWS.

3. INDIAN HEAVY WATER SUPPLY - THE U.S. SUPPLIED THE GOVERNMENT OF INDIA WITH 21 TONS OF HEAVY WATER UNDER A CONTRACT SIGNED IN 1956.

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4. A KEY FACT IN CONSIDERING THE ROLE OF THIS HEAVY WATER IN CONTRIBUTING TO THE PRODUCTION OF THE PLUTONIUM USED IN INDIA'S NUCLEAR TEST IS THAT INDIA PLACED IN OPERATION IN

1962 A SMALL HEAVY WATER PLANT, KNOWN AS NANGAL, CAPABLE OF PRODUCING APPROXIMATELY 12-15 TONS OF HEAVY WATER ANNUALLY AS A BY-PRODUCT OF FERTILIZER PRODUCTION. THE USE OF THE HEAVY WATER DERIVED FROM THIS PLANT WAS SUBJECT TO NO RESTRICTIONS WHATSOEVER IMPOSED THROUGH INTERGOVERNMENTAL UNDERSTANDINGS OR OTHERWISE. (THE ORIGIN OF THIS PLANT AND THE NATURE OF THE ARRANGEMENTS UNDER WHICH IT WAS PROCURED ARE DISCUSSED IN MORE DETAIL LATER IN THIS LETTER.) THUS, INDIA HAD AVAILABLE A SUPPLY OF HEAVY WATER FOR UNRESTRICTED USE WHICH AT A VERY EARLY STAGE IN THE OPERATION OF THE CIRUS REACTOR EXCEEDED THE QUANTITY INITIALLY MADE AVAILABLE BY THE U.S. AS TIME WENT ON, THE PRODUCTION FROM NANGAL EXCEEDED BY A LARGE FACTOR THE 21 TONS TRANSFERRED BY THE U.S. UNDER THE 1956 CONTRACT.

5. INDIA HAS FROM THE OUTSET FOLLOWED THE PRACTICE OF POOLING ITS AVAILABLE HEAVY WATER, AND THERE HAS BEEN NO SEPARATE ACCOUNTING FOR INDIVIDUAL SUPPLIES OF HEAVY WATER, WITH THE EXCEPTION OF THOSE QUANTITIES PROVIDED UNDER AGREEMENTS REQUIRING SAFEGUARDING. THE 1956 CONTRACT CONTAINED NO SAFEGUARDS OR ACCOUNTING REQUIREMENTS WHICH OBLIGATED THE GOVERNMENT OF INDIA TO KEEP U.S. HEAVY WATER SEPARATE FROM ANY OTHER HEAVY WATER AVAILABLE TO INDIA, TO KEEP RECORDS AS TO ITS USE OR CONSUMPTION, OR TO PROVIDE THE U.S. WITH ANY INFORMATION OR ACCOUNTING AS TO ITS USE. NEITHER DID THIS CONTRACT REQUIRE THAT THE HEAVY WATER BE USED EXCLUSIVELY IN THE CIRUS REACTOR, ALTHOUGH THIS WAS THE USE INITIALLY CONTEMPLATED. THUS, HEAVY WATER SUPPLIED BY THE U.S. UNDER THE 1956 CONTRACT WAS PHYSICALLY COMMINGLED WITH HEAVY WATER FROM THE NANGAL PLANT, AND A COMMON STOCK WAS MAINTAINED AS THIS HEAVY WATER INCREASED IN QUANTITY TO AN AMOUNT FAR IN EXCESS OF THAT REQUIRED FOR OPERATION OF THE CIRUS REACTOR.

6. WHILE THE CIRUS REACTOR REACHED CRITICALITY IN 1960, ITS INITIAL OPERATION WAS CHARACTERIZED BY A NUMBER OF DIFFICULTIES AND THE CUMULATIVE MEGAWATT DAYS OF REACTOR UNCLASSIFIED

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OPERATION PRIOR TO 1965 WAS OF THE ORDER OF ONLY 5,900. BY (1964), WHEN ROUTINE OPERATION OF THE CIRUS REACTOR WAS ACHIEVED, INDIA ALREADY HAD AVAILABLE TO IT SOME 38 TONS OF HEAVY WATER FROM THE NANGAL PLANT. BY 1971, TOTAL HEAVY WATER STOCKS WERE ESTIMATED AT 100 TONS. THROUGHOUT THIS PERIOD, HEAVY WATER TRANSFERS OF SEVERAL KINDS, BOTH IN AND OUT OF THE COMMON STOCK, TOOK PLACE.# THIS INCLUDED A LOAN OF 12 TONS TO BELGIUM, WHICH WAS RETURNED TO INDIA IN 1968. AS A RESULT OF REACTOR MAINTENANCE AND MODIFICATION OPERATIONS, HEAVY WATER WAS DRAINED FROM THE CIRUS REACTOR ON NUMEROUS OCCASIONS DURING THE PERIOD IN QUESTION.

THE U.S. ALSO SUPPLIED 15 TONS OF HEAVY WATER TO INDIA

FOR USE IN A ZERO POWER CRITICAL ASSEMBLY - ZERLINA - UNDER A 1959 LEASE AGREEMENT WHICH INCORPORATED SAFEGUARDS. A QUANTITY OF HEAVY WATER EQUIVALENT TO THAT PROVIDED UNDER THIS AGREEMENT WAS RETURNED TO THE U.S. IN TWO SEPARATE SHIPMENTS DURING 1964 AND 1974. THE 1959 LEASE AGREEMENT SPECIFICALLY AUTHORIZED INDIA TO COMMINGLE THE LEASED HEAVY WATER AVAILABLE TO IT, AND TO RETURN AN EQUIVALENT AMOUNT TO THE U.S.

7. THUS, WHILE HEAVY WATER OF U.S. ORIGIN WAS CLEARLY A PART OF THE INVENTORY EMPLOYED FOR CIRUS REACTOR OPERATION PRIOR TO THE 1974 NUCLEAR TEST, IT IS EQUALLY CLEAR THAT THE PRODUCTION OF THE AMOUNT OF PLUTONIUM PRODUCED IN THIS TEST AND, INDEED, MOST OF THE PLUTONIUM PRODUCED BY CIRUS, WAS NOT DEPENDENT ON THE HEAVY WATER INITIALLY SUPPLIED BY THE UNITED STATES.

8. IN LIGHT OF THE ABSENCE OF ANY SAFEGUARDS OR ACCOUNTING REQUIREMENTS IN THE 1956 CONTRACT, THE INDIANS DID NOT MAINTAIN SEPARATE RECORDS RELATING TO THE USE OR LOSSES OF HEAVY WATER SUPPLIED UNDER THE CONTRACT. IN THIS CONNECTION, QUESTIONS HAVE BEEN RAISED AS TO THE 10 PERCENT ESTIMATED LOSS RATE FOR CIRUS WHICH HAD BEEN CITED BY THE DEPARTMENT IN DISCUSSIONS WITH THE NRC AND IN CORRESPONDENCE WITH SENATOR RIBICOFF. THIS ESTIMATED RATE INCLUDES NOT ONLY PERMANENT LOSSES, BUT ALSO MATERIAL WHICH WAS REMOVED FROM THE REACTOR, EITHER DELIBERATELY OR BY ACCIDENT, AND WHICH HAD TO BE RECONCENTRATED BEFORE IT WAS RETURNED UNCLASSIFIED

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TO THE REACTOR OR PLACED IN THE COMMINGLED HEAVY WATER INVENTORY. THE BULK OF THE 10 PERCENT FIGURE IS MATERIAL OF THE LATTER CATEGORY, WITH A MUCH SMALLER AMOUNT OF MATERIAL BEING PERMANENTLY LOST. THESE FACTS DO NOT MODIFY THE CONCLUSION THAT THE U.S.-SUPPLIED HEAVY WATER WAS NOT REQUIRED FOR PRODUCTION OF THE PLUTONIUM USED IN INDIA'S 1974 EXPLOSION.

9. AS NOTED ABOVE, MUCH OF THE AVAILABLE SUPPLIES WERE PRODUCED AT THE PLANT IN NANGAL. THE NANGAL HEAVY WATER PLANT PRODUCES DEUTERIUM THROUGH LIQUIFICATION AND DISTILLATION OF HYDROGEN PRODUCED ELECTROLYTICALLY FOR AN AMMONIA PLANT LOCATED NEAR THE BHAKRA DAM IN NORTHERN INDIA. CONSTRUCTION OF THE PLANT WAS BEGUN IN 1959 AND COMPLETED IN 1961. PRODUCTION SINCE THAT TIME HAS BEEN AT AN AVERAGE RATE OF 12-15 TONS ANNUALLY. IT IS OUR UNDERSTANDING THAT THE ELECTROLYTIC CELLS USED IN SUPPLYING HYDROGEN FEED FOR THIS PLANT AND WHICH ARE, OF COURSE, ALSO A NECESSARY PART OF THE SYSTEM FOR THE PRODUCTION OF HYDROGEN FOR CONVERSION TO AMMONIA, ARE OF ITALIAN ORIGIN. THE AMMONIA PRODUCTION

PORTION OF THE PLANT IS OF FRENCH ORIGIN, WHILE THE HYDRO-

GEN LIQUIFICATION AND DISTILLATION EQUIPMENT, COMPRISING THE HEART OF THE DEUTERIUM SEPARATION SYSTEM, WAS MANUFACTURED BY A WEST GERMAN FIRM, WHICH ALSO DESIGNED AND SUPERVISED CONSTRUCTION OF THE DEUTERIUM SEPARATION SYSTEM. OTHER SERVICES WERE PROVIDED BY TWO U.S. FIRMS, THE VITRO CORPORATION AND THE NATIONAL RESEARCH CORPORATION, AND A BRITISH FIRM SUPPLIED AN ELECTRICAL SUBSTATION AND OTHER ELECTRICAL EQUIPMENT USED IN OPERATING THE OVERALL FACILITY. NO RECORDS ARE AVAILABLE AS TO THE ORIGIN OF OTHER SPECIFIC ITEMS OF EQUIPMENT IN THE OVERALL FACILITY. IT IS UNLIKELY, HOWEVER, IN VIEW OF THE FOREIGN MANUFACTURE OF THE PLANT, THAT ANY SIGNIFICANT AMOUNT OF U.S. EQUIPMENT WAS INSTALLED.

10. THE PROVISION OF U.S. ENGINEERING SERVICES IN CONNECTION WITH THIS PLANT WAS CONSISTENT WITH THEN EXISTING U.S. REGULATIONS, SPECIFICALLY PART 110 OF TITLE 10 OF THE CODE OF FEDERAL REGULATIONS, WHICH GENERALLY AUTHORIZED U.S. PERSONS TO PARTICIPATE DIRECTLY OR INDIRECTLY IN THE UNCLASSIFIED

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PRODUCTION OF SPECIAL NUCLEAR MATERIALS ABROAD WITH CERTAIN EXCEPTIONS, NONE OF WHICH WERE INVOLVED IN ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THIS PLANT. (DELETION.) IN 1972, PART 110 WAS MODIFIED FORMALLY TO REQUIRE SPECIFIC AUTHORIZATION FOR THE EXPORT OF HEAVY WATER FACILITIES OR RELATED TECHNOLOGY.

11. INDIAN REPRESENTATION CONCERNING U.S. HEAVY WATER - THE 1956 HEAVY WATER SUPPLY CONTRACT CONTAINED NO SAFEGUARDS AS THAT TERM IS NOW UNDERSTOOD, BUT DID INCLUDE AN UNDERTAKING THAT THE MATERIAL WOULD BE USED "ONLY IN INDIA BY THE GOVERNMENT IN CONNECTION WITH RESEARCH INTO AND THE USE OF ATOMIC ENERGY FOR PEACEFUL PURPOSES." IN NOVEMBER, 1970, FOLLOWING A NUMBER OF PUBLIC INDICATIONS THAT INDIA WOULD NOT REGARD DEVELOPMENT OF A NUCLEAR EXPLOSIVE DEVICE AS INCONSISTENT WITH A PEACEFUL USES UNDERSTANDING, AN AIDE-MEMOIRE WAS PROVIDED TO THE INDIAN ATOMIC ENERGY COMMISSION WHICH STATED, AMONG OTHER THINGS, THAT "THE UNITED STATES WOULD NOT CONSIDER THE USE OF PLUTONIUM PRODUCED IN CIRUS FOR PEACEFUL NUCLEAR EXPLOSIVES INTENDED FOR ANY PURPOSE TO BE RESEARCH INTO AND THE USE OF ATOMIC ENERGY FOR PEACEFUL PURPOSES."

12. IN SUBSEQUENT DISCUSSIONS, INDIAN AUTHORITIES MADE IT CLEAR THAT THEY DID NOT ACCEPT THIS INTERPRETATION OF THE 1956 CONTRACT. THEY STATED THAT ALTHOUGH THE POLICY AND INTENT OF INDIA WAS NOT TO DEVELOP NUCLEAR WEAPONS, INDIA NEVERTHELESS FELT FREE TO USE NUCLEAR ENERGY FOR ANY PEACEFUL PURPOSES AND TO UNDERTAKE WHATEVER DEVELOPMENT IS RE-

QUIRED IN THIS CONNECTION. U.S. OFFICIALS CONCLUDED, AT

THAT TIME, THAT INDIAN OFFICIALS APPEARED TO BE SAYING THAT INDIA MIGHT ELECT TO MANUFACTURE OR OTHERWISE ACQUIRE, NUCLEAR EXPLOSIVE DEVICES FOR PEACEFUL PURPOSES IN THE LONG TERM. AN EXCHANGE OF VIEWS WITH RESPECT TO CIRUS TOOK PLACE AT THE HIGHEST LEVELS OF THE CANADIAN AND INDIAN GOVERNMENTS IN 1971, AT WHICH TIME THE INDIAN GOVERNMENT REJECTED A SIMILAR CANADIAN EFFORTS TO SO INTERPRET ITS AGREEMENT.

13. STATEMENTS MADE BY INDIAN AUTHORITIES SUBSEQUENT TO UNCLASSIFIED

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THE NUCLEAR TEST HAVE SOMETIMES BEEN CONSTRUCTED AS ASSURANCES THAT NO U.S. HEAVY WATER WAS USED IN CIRUS WHILE THE PLUTONIUM IN QUESTION WAS BEING PRODUCED; A CAREFUL INSPECTION OF THE RECORD SHOWS THAT NO SUCH ASSURANCES WERE, IN FACT, GIVEN. OUR EARLIER CONCLUSION IN THIS REGARD WAS THE RESULT OF MISINTERPRETATION OF INDIAN REMARKS.

14. THE LETTER OF JULY 6 FROM AMBASSADOR KAUL TO SECRETARY KISSINGER (A COPY OF WHICH YOU ALREADY HAVE BEEN PROVIDED) STATES, "WE DID NOT USE OR DIVERT CANADIAN MATERIAL; IN FACT, WE USED 100 PERCENT INDIAN MATERIAL, INDIAN TECHNOLOGY AND INDIAN PERSONNEL." THIS STATEMENT MAKES NO REPRESENTATION REGARDING THE HEAVY WATER USED IN THE CIRUS REACTOR THAT PRODUCED THE PLUTONIUM. A REASONABLY READING OF THE LETTER AND CONSIDERATION OF ITS CONTEXT DOES NOT SUGGEST THAT ANY SUCH REPRESENTATION WAS INTENDED.

15. LATER, IN 1974, CONVERSATIONS TOOK PLACE BETWEEN THEN AEC CHAIRMAN RAY AND THE CHAIRMAN OF THE INDIAN ATOMIC ENERGY COMMISSION, DR. SETHNA, IN VIENNA. THESE CONVERSATIONS WERE DIRECTED PRIMARILY TO THE NEED FOR FURTHER INDIAN ASSURANCES THAT U.S. ENRICHED URANIUM FOR THE TARAPUR NUCLEAR POWER PLANT WOULD NOT BE USED IN INDIA'S NUCLEAR EXPLOSIVE PROGRAM, AND LED TO THE EXCHANGE OF LETTERS ON THIS SUBJECT WITH WHICH YOU ARE FAMILIAR.

16. A MEMORANDUM CONCERNING THESE DISCUSSIONS WAS SUBSEQUENTLY PREPARED AT DR. RAY'S REQUEST. IN THIS MEMORANDUM, IT WAS INDICATED THAT DR. SETHNA HAD CONFIRMED AMBASSADOR KAUL'S EARLIER ADVICE THAT THE INDIAN GOVERNMENT HAS USED ONLY "100 PERCENT INDIAN MATERIAL." IT WAS THEN CONCLUDED THAT NO FURTHER CORRESPONDENCE WITH INDIAN AUTHORITIES ON THE QUESTION OF WHETHER ANY U.S. HEAVY WATER HAS BEEN USED IN THE PRODUCTION OF THAT PLUTONIUM WAS NECESSARY.

(DELETION.)

17. SINCERELY, MYRON B. KRATZER DEPUTY ASSISTANT SECRETARY.
END QUOTE. KISSINGER

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